

Claims

1. A lubricating composition comprising a major amount of an oil of lubricating viscosity, (A) an antiwear improving amount of at least one molybdenum containing composition, (B) at least one phosphorus antiwear or extreme pressure agent, and (C) at least one dispersant, provided that the lubricating composition is free of polysulfurized olefins.
2. The lubricating composition of claim 1, wherein (A) is present in an amount to provide from about 100 to about 900 ppm molybdenum to the lubricating composition.
3. The lubricating composition of claim 1, wherein (A) is a molybdenum containing alkali or alkaline earth metal overbased sulfonate, carboxylate, or phenate.
4. The lubricating composition of claim 1, wherein (A) is molybdenum containing alkali or alkaline earth metal sulfonate.
5. The lubricating composition of claim 4, wherein the alkali or alkaline earth metal is calcium or magnesium.
6. The lubricating composition of claim 1 wherein (A) is prepared by carbonation of a mixture comprising at least one alkali or alkaline earth metal compound, an acidic organic compound, and at least one hydrocarbon insoluble organic molybdenum complex.
7. The lubricating composition of claim 6 wherein the organic molybdenum complex is an amine molybdenum complex.
8. The lubricating composition of claim 1 wherein (A) is at least one molybdenum thiophosphate or at least one molybdenum thiocarbamate.
9. The lubricating composition of claim 1 wherein (A) is at least one molybdenum oxysulfide dithiophosphate or at least one molybdenum oxysulfide dithiocarbamate.

10. The lubricating composition of claim 1 wherein (B) is selected from a metal thiophosphate, a phosphoric acid ester or salt thereof, a phosphorus-containing carboxylic acid, ester, ether, and a phosphite
- 5 11. The lubricating composition of claim 1 wherein the phosphoric acid ester or salt thereof is a phosphoric acid ester prepared by reacting a dithiophosphoric acid with an epoxide to form an intermediate, and the intermediate is further reacted with a phosphorus acid or anhydride, or a salt of the phosphoric acid ester.
- 10 12. The lubricating composition of claim 11 wherein the dithiophosphoric acid is a dihydrocarbyl dithiophosphoric acid independently having from 1 to about 24 carbon atoms in each hydrocarbyl group.
13. The lubricating composition of claim 12 wherein the phosphoric acid ester or salt thereof is prepared by reacting the phosphoric acid ester with ammonia or an amine.
- 15 14. The lubricating composition of claim 13 wherein the amine is a tertiary aliphatic primary amine.
- 20 15. The lubricating composition of claim 1 wherein the phosphoric acid ester or salt thereof is a phosphoric acid ester prepared by reacting a phosphorus acid or anhydride with at least one alcohol wherein each alcohol independently contains from about 1 to about 30 carbon atoms, or a salt of the phosphoric acid ester.
- 25 16. The lubricating composition of claim 1 wherein the phosphoric acid ester or salt thereof is a triarylphosphate.
17. The lubricating composition of claim 16 wherein the triarylphosphate is tricresylphosphate.
18. The lubricating composition of claim 1 wherein (B) is di or trihydrocarbyl phosphite, wherein each hydrocarbyl group independently contains from 1

to 30 carbon atoms.

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19. The lubricating composition of claim 1 wherein (C) is selected from (a) acylated nitrogen dispersants, (b) hydrocarbyl substituted amines, (c) carboxylic ester dispersants, (d) Mannich dispersants, and (e) mixtures thereof.
20. The lubricating composition of claim 1 wherein the dispersant (C) is a borated dispersant.
21. A method of lubricating a transmission or a differential comprising the steps of introducing to a transmission or differential a lubricating composition of
- 10 claim 1, and operating the differential or transmission.